AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1. (Currently amended) A polaroid encoder system for detecting movement, said system comprising:

a movable polarizing code element comprising a first concentric code, ~~extending over two of four quadrants of said movable polarizing code element and~~ a second concentric code ~~extending over two of four quadrants of said movable polarizing code segment~~ and a set of quadrants, the first and second concentric codes ~~juxtaposed~~ adjacent one another over one of the four quadrants of said movable polarizing code element;

a detector module to detect an amplitude based on how much illumination passes through a first portion of said movable polarizing code element, said detector module comprising:

a first illumination detector covered with a first static polarizing filter that is oriented in a first direction;

a second illumination detector covered with a second static polarizing filter that is oriented in a second direction;

a first determination module to identify a quadrant of said movable polarizing code element based on how much illumination passes through a second portion of said movable polarizing code element; and

a second determination module coupled to receive said amplitude and said quadrant and to determine an angular position of said movable polarizing code element using said amplitude and said quadrant~~, wherein the angular position is determined using a respective equation associated with each of the quadrants~~.

2. (Previously presented) The system of Claim 1, further comprising:

a controller module coupled to receive said angular position of said movable polarizing code element, wherein said controller module uses said angular position to control a movable device coupled with said movable polarizing code element.

3. (Previously presented) The system of Claim 2, wherein said controller module is selected from the group consisting of a neural network controller, a fuzzy logic controller, a proportional integral derivations controller, and a motor controller.

4. (Previously presented) The system of Claim 1, wherein said second direction is substantially perpendicular to said first direction.

5. (Previously presented) The system of Claim 4, wherein said first illumination detector and said second illumination detector each comprise a photodiode.

6. (Previously presented) The system of Claim 1, wherein said first and second concentric codes are substantially opaque.

7. (Previously presented) The system of Claim 6, wherein said first and second concentric codes are located within a segment of said second portion of said movable polarizing code element.

8. (Previously presented) The system of Claim 1, wherein said first determination module further comprises a second illumination detector located on the same side of said movable polarizing code element as said first and second illumination detectors of said detector module.

9. (Currently amended) A method for determining angular position of a movable polarizing code element, said method comprising:

illuminating said movable polarizing code element comprising a first concentric code, ~~extending over two of four quadrants of said movable polarizing code element and~~ a second concentric code ~~extending over two of four quadrants of said movable polarizing code segment~~ and a set of quadrants, the first and second concentric codes ~~juxtaposed~~ adjacent one another over one of the ~~four~~ quadrants of said movable polarizing code element;

detecting a first amplitude based on how much illumination passes through a first portion of said movable polarizing code element and a first static polarizing filter oriented in a first direction, said detecting said first amplitude comprises utilizing a first photodiode;

detecting a second amplitude based on how much illumination passes through said first portion of said movable polarizing code element and a second static polarizing filter oriented in a second direction, said detecting said second amplitude comprises utilizing a second photodiode;

determining a quadrant of said movable polarizing code element based on how much illumination passes through a second portion of said movable polarizing code element, said determining said quadrant comprises utilizing a third photodiode, wherein said first, second, and third photodiodes are located on one side of said movable polarizing code element; and

determining said angular position of said movable polarizing code element using said first amplitude, second amplitude and said quadrant~~, wherein using comprises the application of a respective equation associated with each of the quadrants~~.

10. (Previously presented) The method as described in Claim 9, further comprising:

utilizing said angular position to control movable apparatus coupled with said movable polarizing code element.

11. (Previously presented) The method as described in Claim 9, wherein said first and second concentric codes are substantially opaque.

12. (Previously presented) The method as described in Claim 11, wherein said determining said quadrant comprises utilizing said substantially opaque first and second concentric codes.

13. (Previously presented) The method as described in Claim 12, wherein said determining said quadrant further comprises utilizing a fourth diode.

14. (Previously presented) The method as described in Claim 9, wherein said first direction is substantially perpendicular to said second direction.

15. (Previously presented) The method as described in Claim 10, wherein said utilizing said angular position to control said movable apparatus is performed by a controller module.

16. (Previously presented) The method as described in Claim 9, wherein said controller module is selected from the group consisting of a neural network controller, a fuzzy logic controller, a proportional integral derivations controller, and a motor controller.

17. (Currently amended) A system for determining angular position of a movable polarizing code element, said system comprising:

means for illuminating said movable polarizing code element comprising a first concentric code, ~~extending over two of four quadrants of said movable polarizing code element and~~ a second concentric code ~~extending over two of four quadrants of said movable polarizing code segment~~ and a set of quadrants, the first and second concentric codes ~~juxtaposed~~ adjacent one another over one of the ~~four~~ quadrants of said movable polarizing code element;

means for detecting a first amplitude based on how much illumination passes through said first portion of said movable polarizing code element and a first static polarizing filter oriented in a first direction;

means for detecting a second amplitude based on how much illumination passes through said first portion of said movable polarizing code element and a second static polarizing filter oriented in a second direction;

means for identifying a quadrant of said movable polarizing code element based on how much illumination passes through a second portion of said movable polarizing code element, said means for identifying said quadrant comprises an illumination detector; and

means for determining said angular position of said movable polarizing code element using said first amplitude, second amplitude and said quadrant~~, wherein using comprises the application of a respective equation associated with each of the quadrants~~.

18. (Original) The system of Claim 17, further comprising:

means for utilizing said angular position to move an apparatus coupled with said movable polarizing code element.

19. (Previously presented) The system of Claim 17, wherein said first and second concentric codes are substantially opaque.

20. (Previously presented) The system of Claim 19, wherein said first and second concentric codes substantially obscures illumination from being received by said illumination detector of said means for identifying said quadrant.

21. (Previously presented) The system of Claim 17, wherein said first direction is substantially perpendicular to said second direction.

22. (Previously presented) The system of Claim 17, wherein said means for detecting said first amplitude comprises a photodiode covered by said first static polarizing filter.